# 

# 

# 

10 December 2015

**Free Speech and the Study of History**

Professor Timothy Garton Ash

It is a great pleasure and honour to deliver this year’s Colin Matthew Memorial Lecture. Colin Matthew was a colleague at Oxford. He was, as has been said already, an extremely distinguished historian. He was also a lovely human being, warm-hearted, with an impish sense of humour, but slightly less malice than was sometime usual in Oxford in those days. He was also, I would like to say, a senator in the republic of historians, someone who did the profession extraordinary service in the Royal Historical Society and elsewhere, and, by the way, no stranger to issues of free speech in the study of history because the question of free speech is of course also the question of the limits of free speech, and when you are editing the Dictionary of National Biography, you face some interesting questions about what to include and what not to include. Some of the things that we find, for example, in the letters of Richard Cobb or Hugh Trevor-Roper or indeed Isaiah Berlin, are not necessarily to be found in the pages of the Dictionary of National Biography.

Let me say a quick word about how someone who, for thirty years, has been a very contemporary historian or historian of the present of Europe comes to be writing about free speech, and this lecture is a product of some ten years of research, a major research [project](http://freespeechdebate.com/en/) I have been leading at Oxford, a [book](http://www.amazon.com/Free-Speech-Principles-Connected-World/dp/0300161166/ref=sr_1_7?ie=UTF8&qid=1449693655&sr=8-7&keywords=timothy+garton+ash) that is coming out early next year. It seems to me that the question of free speech is one of the key questions for the future of Europe, and not just of Europe, because, for the first time, because of the combination of mass migration and the internet, we live in a world where everyone is becoming neighbours with everybody else. Three hundred languages are spoken in London. We are in the Museum of London. Every culture, faith and ethnicity is represented in this city, and if we are not physically neighbours, we are neighbours on the internet. So the question of the norms of free speech, of what should be the rules of the game, can no longer simply be answered in the boundaries of the nation state. We can no longer simply say “When in Rome, do as the Romans do” because everyone is in Rome and the Romans are everywhere.

So what we have tried to do in this website and in this project is to lay out a set of draft principles, which were very carefully discussed, debated, drafted and re-crafted, and put them out there for debate and discussion. Now, many of the topics that you can see on here in these draft principles are actually extremely difficult to formulate. For example, how do we formulate the principle about privacy or about religion? But interestingly, the question of free speech and knowledge, and even more particularly the question of free speech and the study of history, seems to me far less difficult than formulating a principle on the boundaries of incitement to violence, or religion, or defamation, or privacy. Here is our very simple draft [principle](http://freespeechdebate.com/en/principle/p-5/): “we allow no taboos in the discussion and dissemination of knowledge.” Now, of course, that invites a discussion about what we mean by “taboos”, and we say specifically “discussion and dissemination”, so, for example, and this came up in the many debates we had in formulating this draft principle, after the experience of the dreadful experiments of the Nazis on living human beings, we have very clear limits on the experiments that are acceptable on living human beings, bioethics, genetic engineering. Also, as a former President of the Wellcome Foundation pointed out, if someone found a very simple combination of two substances easily available in a supermarket which, if put together, could produce a very powerful bomb that could be put in a wastepaper basket in any railway station, there would be a strong argument not to disseminate that knowledge. So, in some areas of knowledge, the definition of the taboo has to be rather clearly specified – there clearly are limits. What I want to argue is that, in the case specifically of the study of history, it is very hard to see where the taboos, the legitimate taboos, should lie and where the principle enunciated by John Stuart Mill in the second chapter of “On Liberty”, that the free discussion of ideas should be allowed even if the arguments being made are demonstrably false, firstly, he says, because, even if false, they may contain some grain of truth or allow us to think about a subject in a different way, and secondly, even if totally false, in combating, they keep the rusty axe of falsehood, we keep the good sword of truth sharp and clean. That applies; it seems to me, a fortiori, to the study of history, which proceeds precisely by constructing thesis and counter-thesis on the basis of the available evidence and then allowing a free contest of those arguments.

There are of course many, many aspects of this subject that we could discuss. I want to talk mainly, as was explained I think in the introduction to this lecture, about the role of the state and public authorities in relation to the study of history, and I want to talk firstly about the limits that the state or public authorities might impose on the study of history.

As we all know, it is a characteristic of totalitarian regimes, classically described in George Orwell’s 1984, that they think it very important indeed to control the past, as in the famous Ministry of Truth, Minitrue, where the past disappears down the memory hole – it did not happen, it had never happened, because who controls the past controls the future. As in the Soviet Union’s long denial that there was any secret annex to the Ribbentrop-Molotov Non-Aggression Pact - a Soviet historian actually said that to my face in 1979 - and its long denial, also in Eastern Europe that the Polish elite was systematically murdered in the forests of Katyn in 1940, that is to say, by the Soviets, and not in 1941 by the Nazis.

In China today, again, we have something very close to this in the portrayal, for example, of the events on Tiananmen Square on the 4th of June 1984. I am not sure how well you can see these [slides](http://freespeechdebate.com/en/discuss/online-language-bubbles-the-last-frontier/), but the top one is a Google image search simply that says “Tiananmen Square” in English and shows of course the tanks rolling in, the famous tank man standing in front of the tanks on Tiananmen Square, scenes from the massacre. The second one is a Google image search results for “Tiananmen Square” in Chinese, from inside China, lots of very pretty pictures of the Forbidden City, not a tank in sight. So, that is familiar to us in totalitarian or strong authoritarian regimes.

It is also, of course, very much the case in contemporary Turkey, where negative portrayals of Kemal Ataturk, the founder of the Turkish republic, are forbidden by law, and to describe what happened to the Armenians in 1915/16 in the last years of the Ottoman Empire as genocide is a criminal offence and insult to Turkishness.

The trouble is, ladies and gentlemen, that it is not just in totalitarian and authoritarian, hard or soft authoritarian regimes, that such limits are applied. They apply also, as we know, in many European democracies, and they apply in the form of what are loosely called “memory laws”.

Now, the [story](http://freespeechdebate.com/en/discuss/eu-versus-intellectual-freedom/) of memory laws starts with the discussion of Holocaust denial. For the avoidance of any doubt, as someone who’s formative experiences were in studying modern German history and then in contemporary Central Europe, the memory of the Holocaust is a defining experience of my own life and my own view of the world. In some sense, I think that everything we have been trying to do in Europe since 1945, in a broader sense, everything we have been trying to do in building a liberal international order, is an answer to the memory of the Holocaust and of course of the Gulag. It is that “never again”! But I am profoundly convinced that imposing bans on Holocaust denial by law is not only ineffective but counter-productive and it is to this I now want to turn.

It is interesting, by the way, to note that Holocaust denial spreads as a criminal offence in Europe not, as you might expect, in the late-1940s and 1950s, when the memory was still extremely fresh, when many, many survivors were still alive and there was a real danger of neo-Nazi revival. At that time, it is true that in the Federal Republic of Germany, Holocaust denial would generally be prosecuted under a specific paragraph, what was called “Volksverhetzung”, stirring up hatred, but there was no explicit criminalisation of Holocaust denial. The explicit criminalisation of Holocaust denial starts actually in France in 1990, is introduced only in Germany by a change in the law in 1994, and today, at a rough count, slightly more than 14 EU democracies have Holocaust and/or broader genocide denial laws, so it is a phenomenon of the last quarter-century and not of the immediate post-War period.

Now, ladies and gentlemen, it seems to me self-evident that, given the overwhelming historical evidence and scholarship for the historical reality of the Holocaust, someone who is not convinced by that evidence in that scholarship is not going to be convinced by the simple fact of a law saying that you cannot say it, so it is a consciously symbolic act. But I believe that such laws can also be, and indeed are, counterproductive and have potentially very serious negative knock-on, effects, both for free speech and for the study of history.

The classic example for this is one which of course Richard Evans, who I am delighted to see with us today, knows better than anyone, which is the case of David Irving. Deborah Lipstadt described Irving in her book “Denying the Holocaust” published in 1993, as a Holocaust denier. In 1995, she describes getting a letter saying he was threatening to sue, and this developed into one of the great trials of our time, in which Richard Evans was a superb professional historical witness. The outcome of the trial was the most devastating verdict delivered by the judge, which absolutely upheld the contention of Deborah Lipstadt that David Irving had indeed been a Holocaust denier. The impact on Irving’s reputation, which it is as well to remember, and again, Richard has written about this extensively, had some years before not been entirely in the mud - reputable historians, like A.J.P. Taylor and Hugh Trevor-Roper had said positive as well as sceptical things about his scholarship – was thoroughly discredited. But then what happens?

Austria, having a Holocaust denial law, arrests him, imprisons him for Holocaust denial in 2006, and he is held in prison for a period of time before being released, and he manages to pose as a martyr for free speech. The Oxford Union, of all places – I am not going to say the Oxford Union always has perfect judgement in its choice of speakers - but the Oxford Union invites David Irving to speak in 2007, as in some sense a defender of free speech. Which, ladies and gentlemen, was the better way to counter and discredit the arguments of Holocaust denial: the free contest of ideas among scholars, historians, journalists, and eventually in a court of law in a case brought by David Irving, or the impact of that Holocaust denial law which enabled him to, so to speak, re-present himself as a martyr for free speech? But that is not the only problem with Holocaust denial laws, with the criminalisation of Holocaust denial.

As I mentioned at the beginning, we all live in what are called multicultural societies, at least in Western and Central Europe. What happens in such societies is what I call the taboo ratchet. Inevitably, once one group or one history has been given, so to speak, this special position of the denial of the Holocaust being criminalised by laws; other groups, other tendencies, demand the same. And the next, so to speak, prominent group on the scene were of course the Armenians or those representing the history of Armenia, and, as some of you will know, the distinguished historian of Ottoman Empire, Bernard Lewis, was convicted by a French court in 1995 – there is the court verdict, you can click off our website to see it – for denying that what happened to the Armenians in the last years of the Ottoman Empire – and here you can see is what he said in his interview with Le Monde – was strictly speaking a genocide in the terms of international law. He made the argument in an extremely nuanced way, and then further nuanced it in a subsequent article in Le Monde, and nonetheless he was convicted, although only to pay a nominal fine.

In Switzerland, which also criminalises denial of the Armenian genocide, a much less acknowledged and respected scholar, a rather fiery Turkish writer, Dogu Perincek, was convicted in 2007 of denying that what happened to the Armenians in the last years of the Ottoman Empire was genocide. At roughly the same time, the Turkish novelist, Orhan Pamuk, a Nobel Prize winner, was prosecuted in Turkey for saying - curiously enough, to a Swiss magazine - that what happened to the Armenians was genocide. So, what was state-ordained truth in Switzerland was state-ordained falsehood in Turkey. What was state-ordained truth in the Alps was state-ordained falsehood in Anatolia. You can see the problem with states legislating historical truth.

Interestingly, only two weeks ago, the European Court of Human Rights reversed the Swiss court’s judgement on the inflammatory Perincek, not defending in any way what he had said, but arguing that to convict him of genocide denial was a violation of Article 10 of the European Convention of Human Rights, that is to say the free speech article. Interestingly, one of the points they made was that, whereas countries like Austria and Germany had a close historical connection with the Holocaust and therefore the European Court of Human Rights has actually defended Holocaust denial laws, it says, almost amusingly: “It has not been argued that there was a direct link between Switzerland and the events that took place in the Ottoman Empire in 1915 and the following years,” which seems to be a fair enough statement. (I do not think the Swiss Guard was very much in evidence in the Ottoman Empire in 1915.) But the verdict came only on the key point with a vote of 10 judges to 7, and only eight years later.

Now, there was a major pushback against what I have called the taboo ratchet, against this movement to criminalise various forms of denial, notably the movement called Liberté pour l’Histoire, Freedom for History, led by a distinguished group of French historians who launched something called the Appel de Blois, the Blois Appeal. Here you have it, signed, amongst others, by Eric Hobsbawm, by Jacques Le Goff, by Heinrich August Winkler, by an Italian historian called Luigi Cajani, who has been very, very significant in these respects, and many others. It says – and this is a key passage – “It is not the business of any political authority to define historical truth and to restrict the liberty of the historian by penal sanctions”.

Since then, there have been many historians who have spoken out against this tendency. Nonetheless, while the historical profession has spoken out strongly against this, this has not been what has been happening in the politics and law of the European Union. The European Union introduced in 2008 what is called a Framework Decision on combating racism and xenophobia by means of criminal law, which says in its crucial passage – and by the way this was introduced by a German Justice Minister, Brigitte Zypries – that, I quote, “Member States must criminalise the public condoning, denial and gross trivialisation of the crimes defined in Articles 6, 7 and 8 of the statute of the International Criminal Court, Crimes of Genocide, Crimes Against Humanity and War Crimes directed against a group of persons or member of such a group…”. Such a framework decision is then sent to the Member States, who are rather firmly asked to translate it into their own national law. Interestingly, a European Commission document says that this framework decision was largely inspired by German law.

I yield to no one in my admiration for the way in which Germany has faced up not just to one but to two difficult pasts – the Nazi past and then the East-German Communist past. Some of you will have heard, of the DIN standards, (Deutsches Institut fur Normung) which are the standards for things like machine tools, and - before we heard about Volkswagen - were regarded as really the gold standard, and I once joked that Germany had produced the DIN standards for dealing with a difficult past.

But I think there is a real problem in attempting to generalise German practice by law for the whole of the European Union, and what has been applied to the Holocaust to all other cases of genocide crimes against humanity and war crimes, and that problem is, as I have mentioned, the taboo ratchet in the first place. Inevitably, you move from one taboo to the demand for another. So, I mentioned already from the Holocaust to legislation on the Armenian genocide.

Partly in response to the French legislation on the Armenian genocide, in 2001, the French Parliament passed a law, the Loi Taubira, which prescribed that slavery in Africa, particularly in the French colonies in Africa should be described as a crime against humanity.

Then, of course the Central and East European countries, which had lived under Communism, joined the EU, most of them in 2004, and they said, unsurprisingly, “Well, why are you only talking about the crimes of Nazism and Fascism? What about the mass murder, the genocide, of Communism?” So that both Poland and the Czech Republic have laws which criminalise, in different ways, the denial of both Nazi and Communist crimes, in the Polish case - “against the Polish nation”.

Particularly interesting is the case of Hungary. In 2010, the Hungarian Parliament passed a law criminalising Holocaust denial. Then the Government changed. A new populist, nationalist, right-wing Government came into power in Parliament and immediately changed the law so that it now reads that it should punish those who deny the genocides committed by the National Socialist or Communist systems.

Then what about Ukraine? When Ukraine comes into the system, and after all, Ukraine is a member of the Council of Europe, would it not be reasonable enough for Ukrainians to say, as did President Yushchenko of Ukraine in 2007, that the great famine deliberately caused by Stalin in the early 1930s, what Ukrainians call the Holodomor, which Robert Conquest and more recently Timothy Snyder have written about so eloquently, was a genocide?

And so it continues, from one taboo to the other. What are we to have? A Brussels-approved list of genocides and crimes against humanity? Also known as the Zypries’ list? How is this to be determined? How is this to be adjudicated?

There is, moreover, one other problem, which let me just mention very briefly, which is of a slightly different order. As you know, one of the greatest problems with free speech we have in Western Europe in particular at the moment is that with portrayals of the Prophet Muhammad. One of the points that European Muslims insistently and frequently make is: how can it be right that you, European humanists, liberals, heirs to the Enlightenment, Jewish, not Jewish, Christian, not Christian, defend by criminal law that which you hold to be most sacred, namely the memory of the Holocaust, but give absolutely completely free rein on portrayal of the Prophet Muhammad, which is what we Muslims hold to be most sacred.

Now, of course, I hasten to add, these things are not strictly comparable – that is self-evident. One is a statement about historical fact; the other is a portrayal of belief. Nonetheless, as I argued earlier, Holocaust denial laws do have a strong element of what is sometimes called expressive law, a symbolic statement about the character of the state, and so I do not think this argument about double-standards is to be dismissed utterly out of hand, even if it is not the crucial and decisive one.

The European Commission has now issued a follow-up report. It says that 13 Member States have not complied with its framework decision, among them the United Kingdom. I do not want to sound like a Euro-sceptic, but this is one of those few cases where I would almost be rather glad of a British opt-out. But more to the point, I actually think that what we should do, if we believe that historical truth, or the closest we can get to historical truth, is best approached through free historical, scholarly, journalistic debate and not legislated by criminal law, is to work inside the European Union to reverse that Framework Decision and in fact to reverse all, I would argue, all such memory laws and to return to the good spirit of John Stuart Mill in chapter two of “On Liberty”.

Incidentally, one other effect of the members of the European Union doing that is the example it gives to other neighbours because people in Turkey and in Russian and in China, elsewhere, will say and do say, “Well, we are only doing in our own way what you yourselves are doing in Europe”. This, by the way, the position I have just outlined, is also the position of the United Nations Human Rights Committee, which, in its authoritative general comment on Article 19 of the International Covenant on Civil and Political Rights, which is the legal form of the Universal Declaration of Human Rights, says, and I quote, “Laws that penalise the expression of opinions about historical facts are incompatible with the obligations that the International Covenant imposes on states”. So that is also the official view of the most authoritative body, that this is incompatible with Article 19.

Is this to say that states and public authorities should do nothing about such denial? Of course not – absolutely not, self-evidently not. And here I want to bring in what seems to me a really helpful distinction, which is made by the political scientist Corey Brettschneider in a [book](http://www.amazon.com/When-State-Speaks-What-Should/dp/0691147620/ref=sr_1_2?ie=UTF8&qid=1449695292&sr=8-2&keywords=Corey+brettschneider) with a rather curious title, “When the State Speaks, What Should It Say?”, between the coercive function of the state and the expressive function of the state, and what I want to argue, as does Brettschneider, is that the coercive function of the state, be it through memory laws, hate speech laws, or however, should not be applied to the study of history, but the expressive function of the state, the state as speaker, as educator, as supporter of public bodies, as supporter of education in its multiple forms, need of course should not be neutral on these issues. As John Locke said in his letter concerning toleration, “It is one thing to persuade, another to command, one thing to press with arguments, another with penalties.” So, I think it is absolutely right that the state and public authorities, in their expressive role, to use Brettscheider’s terms, should speak and make historical value judgements, as they do, for example, in supporting museums, like, to take one I know well, the Museum of German History in Berlin, in supporting the first serious exhibition about Adolf Hitler, which was in that Museum, in supporting the Holocaust memorials in Berlin, some of them extremely moving.

Myself, I find the most moving of all is not the great big Holocaust memorial right in the centre of Berlin, but what are called the Stolpersteine, the little cobblestones that you find all over Berlin and other cities like Hamburg, which just on a little cobble or paving stone have the name of the Jews who were deported and mainly then murdered from that house or apartment. In a few days’ time, we will be marking a certain part of our history, very much with the full authority of the state, in front of the Cenotaph on Whitehall. The state can speak through commemorative days, Holocaust Memorial Day, Martin Luther King Day, Columbus Day - or, as they say in Berkeley, Native Americans’ Day.

Of course, these politics of memory are always contested, and in a sense, the pre-condition for accepting the expressive power of the state is that they can be contested, and actually, that contestation of what should be memorialised in a museum, in a monument, and what should be put into a curriculum is itself part of that interplay between free speech and the study of history.

So, to give an example from a country I know well, in Poland, one of the first truly modern museums of history was the Museum of the History of the Warsaw Rising of 1944. I do not know if any of you have been to it. I recommend it to you. It is an extremely well done museum. This Museum however was a political act. It was a political act by the Kaczynski twins, one of whom has just won the Polish elections resoundingly on Sunday. It presented a certain vision of Polish history in order to project forward a certain idea of Polish politics – highly political. But that free contestation of public memory also allowed, a few years later, the opening of something which would have been utterly unthinkable before 1989, before Poland became a free country, namely a magnificent Museum of the History of the Polish Jews, made together by Polish and Jewish historians and museum specialists. I was at the opening, at which the Presidents both of Poland and Israel spoke.

So, yes, absolutely, the state should be free to offer judgements, public authorities should be free to offer judgements, but not in the coercive role but in the expressive role. This itself brings particular issues and problems in one area, namely in education, and here I am thinking to some extent of universities – perhaps we can talk about that in discussion – but particularly in the case of schools, where public authorities, be they provinces or federal or nation state, set curricula. We ourselves have had a big debate about our national curricula. But once again, I want to argue that, for all the problems that there are in putting difficult subject matter before young people, and it has to be said very clearly that, self-evidently, when you are dealing with 12 year olds, you are not going to be able to conduct the free public debate of history with the full range of arguments and material and evidence, also visual material, that you would, for example, in a room like this, nonetheless, the preference should be to seek the freest possible introduction to the methods of historical argument.

Here is just one little example, a book one or two of you might have come across called “Mein Kampf”. As some of you will know, what happened after 1945 is that the Allies gave the copyright in “Mein Kampf” to the free-state of Bavaria, which did not allow it to be officially published in full, although it was quite widely available and obviously on the internet. That copyright [expires](http://freespeechdebate.com/en/discuss/can-a-book-be-too-dangerous-for-the-public/) at the end of this year. The magnificent Institute for Contemporary History in Munich had the excellent idea of doing an annotated version of “Mein Kampf” which could be used educationally in schools and universities. This was initially subsidised by the state government of Bavaria, but after some political debate and criticism, they withdrew the subsidy and the support, although the edition is still coming out. I would want to argue that that was the wrong decision and that what the Institute of Contemporary History was trying to do was precisely the right thing: that is to say, to confront this extraordinarily difficult material but put it carefully in context in the annotated edition, and it would be precisely evidence of the maturity of German democracy, of German society, if, rather than trying to ban “Mein Kampf”, it was able to confront it in this way.

Let me finish, if I may, with a story. This is a story, and again, you will [find](http://freespeechdebate.com/en/discuss/talking-about-the-holocaust-between-the-walls/) it in full on the website, of a man who now teaches at the University of Montreal, Marc-Antoine Dilhac. He was teaching in a small school, in a school in provincial France, and mentioned Auschwitz, and heard behind him one of his pupils telling an awful joke, “They used the ovens to get tanned, you know.” He was horrified, and initially he was furious and told them to shut up, but then the next day, he came back and he said, “Look, I think we need to talk about this,” and their reaction is very interesting. He tells the story. They said this: “No, Sir, we cannot talk about that. For one thing, we are not on the same side. You know it. We know it. And if we told you what we thought of Jews, we would break the law. You would have to make a report to the head and we would be in big trouble, so please let us move on.” He says he was expecting that kind of reason, he told them that what they said would remain in the classroom, and he said, “But let us talk about it,” and they then had a very, very intense discussion in which these kids, and by the way, they were, as he points out, not of Arab or North African background, they were virtually all French provincial kids, said it seems to us so one-sided, that there is only this ban on Holocaust denial and what about the Palestinians and what about the suffering of others and so on and so forth. What is interesting, at the end of this discussion, according to Marc-Antoine Dilhac, when he had argued that, on the contrary, to remember it only strengthens our sensitivity to injustice to other human beings, and they talked about it, and then, I quote, “At the end of the class, they were grateful that I let them talk freely, that they understood their mistakes and why it was morally wrong to support and spread anti-Semitic views.” Now, he says “I cannot say that I succeeded in changing their minds altogether, but I think it was worth the attempt.” I think so too. I think, even in that context, it was worth the attempt, and actually, I think, it is probably easier to have that argument in a structured way in a classroom of a secondary school than in the chaos of the internet.

I hope you will have a chance to go onto the website, [www.freespeechdebate.com](http://www.freespeechdebate.com), or look at the [book](http://www.amazon.com/Free-Speech-Principles-Connected-World/dp/0300161166/ref=sr_1_7?ie=UTF8&qid=1449695680&sr=8-7&keywords=timothy+garton+ash) and read these stories in detail, but let me come back and summarise finally my argument.

I argue that, in its coercive role, the state should in no way limit the study of history, and we should therefore move to reverse and repeal the memory laws that exist; that, however, in its expressive role, the state and other public authorities have an important part to play, provided always the emphases it places can be contested freely, and that includes the attempt to confront these most difficult issues in a carefully structured way in the classroom. It is not just that the legal framework of free speech is essential to the study of history. It is that the intellectual, social and cultural practice of free speech, of open argument conducted with robust civility, is intrinsic to the study of history itself. You may say it is intrinsic to most academic disciplines, indeed, I agree, but I think particularly so to the pursuit and progress of historical study, which depends precisely on the free contention of even the most controversial theses being tested against the evidence. In short, if you will allow me a conclusion which, in its over-statement, may sound just a touch Gallic: I think there is no true free speech without the free study of history and there is no proper study of history without free speech.

Thank you very much.

© Professor Timothy Garton Ash, 2015

Gresham College

Barnard’s Inn Hall

Holborn

London

EC1N 2HH

[www.gresham.ac.uk](http://www.gresham.ac.uk)

Please note: This is a lightly edited transcript of the lecture as delivered.